

AMENDMENTS TO THE CLAIMS

Cancel claims 2, 3, 6–8, 12 and 17–20. Amend claims 1, 4, 9 and 13–15.

1. (Currently Amended) A work vehicle comprising:
  - a frame;
  - an axle assembly coupled to the frame and including a first axle shaft and a first axle housing, wherein the first axle shaft is disposed substantially within the first axle housing;
  - a first wheel coupled to the axle assembly;
  - an axle lubricating fluid disposed within the first axle housing; and
  - a first axle cooling device disposed substantially within the first axle housing, in contact with at least a portion of the lubricating fluid, including a first coil;
    - a cooling fluid contained within the first coil, wherein the first coil is configured to conduct cooling fluid therethrough and to maintain the cooling fluid separate from the lubricating fluid;
    - a cooling fluid circuit fluidly coupled to the first coil, wherein the cooling circuit includes a cooling fluid pump and a cooling fluid reservoir, and wherein the first coil receives cooling fluid from the pump and delivers cooling fluid to the reservoir; and
    - a second wheel, wherein the axle assembly is further coupled to the second wheel and further includes a second axle shaft, a second axle housing, and a second coil, and further wherein the second axle shaft and the second coil are disposed substantially within the second axle housing,
    - wherein the cooling circuit further includes a crossover conduit, an inlet of the first coil receives cooling fluid from the pump, an outlet of the first coil delivers cooling fluid

through the crossover conduit to an inlet of the second coil, and an outlet of the second coil delivers cooling fluid to the reservoir, the second coil being thereby coupled to the first coil in series flow relationship by the crossover conduit.

2–3. (Canceled).

4. (Currently Amended) The work vehicle of claim [[3]] 1, further comprising a heat exchanger disposed in the cooling circuit between the first coil and the reservoir to remove heat from the cooling fluid.

5. (Original) The work vehicle of claim 4, further comprising a control valve disposed to direct at least a portion of the cooling fluid to the first coil at a predetermined pressure difference across the first coil.

6–8. (Canceled).

9. (Currently Amended) An axle assembly for a work vehicle, the axle assembly comprising:

a first axle shaft and a first axle housing, wherein the first axle shaft is disposed substantially within the first axle housing;

a second axle shaft and a second axle housing, wherein the second axle shaft is disposed substantially within the second axle housing, and wherein the second axle shaft and the second axle housing are disposed coaxial with, and in opposing relationship to, the first axle shaft and the first axle housing, respectively;

~~a first cooling device disposed within the first axle housing;~~

~~a second cooling device disposed within the second axle housing;~~

a differential gearset housing positioned intermediate the first and second axle housings and defining a chamber configured therein to receive a differential gearset, which is  
[[;]] a differential gearset disposed within the chamber and rotatively coupled to the first and second axle shafts;

a lubricating fluid disposed within the first and second axle housings; and

a cooling device including a first axle cooling device disposed within the first axle housing, and a second axle cooling device disposed within the second axle housing; and

a crossover conduit for coupling an outlet of the first axle cooling device to an inlet of the second axle cooling device.

10. (Original) The axle assembly of claim 9, further comprising a cooling fluid housed within the first and second axle cooling devices, wherein the first and second axle cooling devices are configured to conduct cooling fluid therethrough and to maintain the cooling fluid separate from the lubricating fluid.

11. (Original) The axle assembly of claim 10, wherein the first and second cooling devices include first and second coils, respectively, each coil configured to provide at least two passes of the cooling fluid through the lubricating fluid within each of the first and second axle housings.

12. (Canceled).

13. (Currently Amended) The axle assembly of claim [[12]] 11, wherein the cooling [[circuit]] device includes a cooling fluid pump and a cooling fluid reservoir and the first and second coils receive the cooling fluid flowing from the pump and deliver it to the reservoir.

14. (Currently Amended) The axle assembly of claim [[13]] 11, wherein the cooling [[circuit]] device further includes a heat exchanger in fluid communication with the first and second coils.

15. (Currently Amended) The axle assembly of claim [[13]] 11, wherein the cooling [[circuit]] device further includes a control valve for directing at least a portion of the cooling fluid flow to the first and second coils at a predetermined pressure difference across the first and second coils.

16. (Original) The axle assembly of claim 15, wherein the control valve is configured as a back pressure regulating valve.

17–20. (Canceled)